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ABSTRACT

One of a series on educational planning, this booklet reviews the findings of several studies on the employment of university graduates in five developing countries: Egypt, Philippines, Sudan, Tanzania, and Zambia. Data for these studies were collected from samples of students and former graduates. A number of facets of the topic are investigated in each country: socioeconomic framework, educational characteristics, the labor force structure, cost of education, salary structure, role of the public sector, salary expectations, returns to education, unemployment, role of credentials, social demand for higher education, student advice in selecting a career, admission into higher education, admission tests, private finance and the elite, reasons for undertaking higher education, perception of job characteristics, and willingness to work in rural areas. Some specific questions addressed are: What are the main determinants of choice among disciplines and among jobs? How does wage structure vary between sectors of employment and between specializations? What is the degree of mismatch between expectations and realities in respect of the reward system of the labor market? How does unemployment vary from course to course and from level to level? Twenty-four conclusions or recommendations in the form of "hints" are presented. (JM)

Fundamentals of educational planning

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Higher education and employment: the IIEP experience in five less developed countries

George Psacharopoulos and Bikas C. Sanyal

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Fundamentals of educational planning

The booklets in this series are written primarily for two types of clientele: those engaged in—or preparing for—educational planning and administration, especially in developing countries; and others, less specialized, such as senior government officials and policy-makers who seek a more general understanding of educational planning and of how it is related to overall national development. They are devised to be of use either for private study or in formal training programmes.

Since this series was launched in 1967 the practice as well as the concept of educational planning has undergone substantial change. Many of the assumptions which underlay earlier attempts to put some rationality into the process of educational development have been abandoned or at the very least criticized. At the same time, the scope of educational planning itself has been broadened. In addition to the formal system of schools, it now includes other important educational efforts in non-formal settings and among adults. Attention to the growth and expansion of educational systems is being supplemented and sometimes even replaced by a growing concern for the distribution of educational opportunities and benefits across different regions and across social, ethnic and sex groups. The planning, implementation and evaluation of innovations and reforms in the content and substance of education is becoming at least as important a preoccupation of educational planners and administrators as the forecasting of the size of the educational system and its output. Moreover, the planning process itself is changing, giving more attention to the implementation and evaluation of plans as well as to their

design, and exploring such possibilities as integrated planning, participatory planning, and micro-planning.

One of the purposes of these booklets is to reflect this diversity by giving different authors, coming from a wide range of backgrounds and disciplines, the opportunity to express their ideas and to communicate their experience on various aspects of changing theories and practices in educational planning.

Although the series has been carefully planned, no attempt has been made to avoid differences or even contradictions in the views expressed by the authors. The Institute itself does not wish to impose any official doctrine on any planner. Thus, while the views are the responsibility of the authors and may not always be shared by Unesco or the IIEP, they are believed to warrant attention in the international forum of ideas.

Since readers will vary so widely in their backgrounds, the authors have been given the difficult task of introducing their subjects from the beginning, explaining technical terms that may be commonplace to some but a mystery to others, and yet adhering to scholarly standards. This approach will have the advantage, it is hoped, of making the booklets optimally useful to every reader.

Preface

In this booklet, G. Psacharopoulos and B. C. Sanyal review the findings of a series of studies on the employment of university graduates carried out in five developing countries: Egypt, Philippines, Sudan, Tanzania and Zambia. These studies have been conducted by national teams, in co-operation with the IIEP, in the framework of a research programme on 'Higher Education and Employment', under the direction of Bikas Sanyal.

These issues are of crucial importance for educational planners. The relationship between education and employment is one of considerable complexity and defies oversimplified models of quantitative correspondence between the output of an educational system and the expected intake of the labour market. The operation of the labour market—e.g. recruitment and promotion practices, wage policy—plays an important role in this relationship, as do the perceptions, attitudes and expectations of students, graduates and employers. The nature of the phenomenon of unemployment of graduates also varies from country to country and with time; there is also a great deal of flexibility within both the education system and the system of employment in a country which allows for an adjustment mechanism to be developed to match the two systems. All this requires more of our attention if we wish better to understand the dynamics of the relationship between education and employment.

In the IIEP studies these problems have been investigated through surveys by questionnaires conducted among samples of students and former graduates.

Specifically, the issues which have been addressed are: what are

the main determinants of choice among disciplines, and among jobs? How does wage structure vary between sectors of employment and between specializations? What is the degree of mismatch between expectations and realities in respect of the reward system of the labour market? How does unemployment vary from course to course and from level to level? Is it true that what appears to be an 'unemployment problem' among university graduates is in fact to a large extent a 'job-seeking process'? What role do credentials play in finding a job? To what extent do the educational institutions help the students in the process of transition from school to work? What factors are determining the demand for higher education?

The authors have tried to draw from the survey findings some 'hints' for educational planners rather than definite policy conclusions. It is hoped that these policy implications, however tentative, will bring a useful contribution to planners faced with the task of relating educational development targets with employment objectives and the needs of the economy.

Michel Debeauvais
Director, IIEP

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George Psacharopoulos
Bikas C. Sanyal

Introduction

The process of educational planning is very complex in at least two dimensions. First, a myriad of 'actors' are involved in what can be broadly labelled 'educational decision-making'; and second, there exist innumerable issues or 'themes' within the planning process.

Given the number of themes and actors, no single treatment in the related literature can claim to have dealt in a global way with all dimensions of the intricate educational planning process.[1]

This booklet on higher education and employment makes no exception to this rule. Its purpose is to draw together more or less comparative evidence from five developing countries in an effort to, perhaps, increase our understanding on particular parts of the actors-themes educational-planning nexus.

The data come mainly from IIEP's Project on Higher Education and Employment. A number of supplementary sources has also been referred to when it was necessary for clarifying some issues. The five countries compared are Egypt, the Philippines, the Sudan, Tanzania and Zambia.[2]

1. For an enumeration and spelling-out of the variety of issues involved, as well as an elaboration of the necessary information for tackling these issues, see G. Psacharopoulos (ed.), *Information in educational decision-making: concepts, country cases and sources*, Paris, Unesco, 1980.
2. See: B. Sanyal and El Sammani A. Yacoub, *Higher education and employment in the Sudan*. Paris, IIEP, 1975.
   B. Sanyal, J. H. Case, P. S. Dow and M. E. Jackman, *Higher education and the labour market in Zambia: expectations and performance*. Paris, The Unesco Press and the University of Zambia, 1976.

The paper is organized in terms of a set of unstructured educational planning 'themes'. Within each theme, one or more 'hints' are derived from empirical material that might have a more general applicability.

B. Sanyal and M. Kinunda, *Higher education for self-reliance: the Tanzanian experience*, Paris, IIEP, 1977.

B. Sanyal, W. S. Perfecto and A. A. Arcelo, (eds.), *Higher education and the labour market in the Philippines*, Paris and New Delhi, Unesco: Wiley Eastern, 1981.

B. Sanyal, S. Balbaa, A. A. El-Koussy, M. Harby and R. Noonan, *University education and the labour market in the Arab Republic of Egypt*, IIEP, 1980 (working draft).

These references will be denoted hereafter as 'IIEP country studies'.

We have also used a considerable amount of material from ILO, *Sharing in development: a programme of employment, equity and growth in the Philippines*, 1974. This will be indicated as the 'ILO Philippines Report'.

I. The socio-economic framework

Let us start by comparing the non-educational setting in the five countries under consideration. Table 1 presents the basic demographic and economic data in this respect. The five countries differ considerably in population size, the Philippines having nearly ten times the population of Zambia. All five, however, share a more or less similar population growth rate, lying between 2.5 and 3 per cent. Although the five countries could be classified in the LDC (less-developed countries) group, there exist considerable discrepancies in *per capita* incomes, Zambia being the leader. In all the countries the gross domestic product (GDP) is dominated by agriculture. The Philippines and Egypt, however, have larger shares in manufacturing-generated GDP. Finally,

TABLE 1. Socio-economic characteristics.

Characteristic	Egypt	Philippines	Sudan	Tanzania	Zambia
Population in millions	35.6	40.2	17.1	14.0	4.6
Population growth (1965–73)	2.5	3.0	2.8	2.8	2.9
Per capita income (in U.S.$)	250	280	130	130	430
Percentage of GDP from agriculture	29.6	35.7	32.3	44.7	40.9[1]
Percentage of GDP from manufacturing	21.6	19.1	8.2	8.8	10.9
GNP growth rate (1965–73)	3.3	5.8	2.2	5.5	2.5

NOTES Unless otherwise stated, data refer to 1973.
1. Includes mining.
SOURCE World Bank, *World tables* 1976.

Tanzania and the Philippines have grown at twice the rate of Zambia and the Sudan in the 1965 to 1973 period.

Examination of the socio-economic setting is a prerequisite to any educational-planning analysis. The reason is that all variables listed above relate—either directly or indirectly—to the way schools have run in the past or should be run in the future. Thus, population size, and especially population growth, makes demands on school places, e.g. at the primary level. A higher or a lower *per capita* income could make the difference between adequate or inadequate school provision, let alone education quality. The relative share of manufacturing in the GDP has a double link to educational planning: first, by the demands an expanding manufacturing sector makes on specific manpower skills, and second, by the size of the on-the-job training platform created by an expanding industry. Lastly, the rate of growth of GNP is indicative of the extra real resources a country could afford to allocate to its educational sector.

II. Educational characteristics

But let us look at the different educational characteristics of the countries under comparison (Table 2). The proportion of illiterate population exceeds the 50 per cent mark in all countries except the Philippines. One must look for explanations of this phenomenon. Also, the percentage of population with secondary-plus educational qualifications in the Philippines is about fourteen times that in Zambia and the Sudan; this is another observation that needs explanation. Enrolment rates follow similar patterns: those in the Philippines are much higher than in other countries.

One might expect that the educational advantage of the Philippines is due to a long-standing government policy to promote education. Yet a look at the public expenditure statistics in Table 2 reveals that the opposite is likely to be the case. The State Government of the Philippines exerts only one-third to one-fourth the effort to promote education as do other countries, as judged from the relative public expenditure as percentage of national income or total government expenditure. It is the private sector that dominates the educational scene in the country. Egypt, the Sudan, Tanzania and Zambia put a great effort into devoting public resources to their educational system: the percentages of GNP and total state budget devoted to education are on the high side by international standards. Yet these countries are educationally less developed than the Philippines, which devotes only a smaller fraction of its state resources to education. There also exist substantial differences in the distribution of total educational expenditure by school level. Among the five countries, Egypt

TABLE 2. Educational characteristics.

Characteristic	Egypt	Philippines	Sudan	Tanzania	Zambia
Illiterate population (%)	56.5	17.4	85.3	71.9	52.7
Population with secondary education-plus (%)	n.a.	14.2	0.8	n.a.	1.3
Enrolment ratio (%)					
Primary	72	100	41	70	95
Secondary	44	59	13	3	15
Higher	14.3	20.6	1.4	0.2	2.0
Total public educational expenditure					
Percentage of GNP	5.5	1.4	5.5	4.4	6.5
As percentage of government expenditure	18.4	8.0	14.8	15.5	11.9
Public recurrent expenditure (percentage distribution by level)					
Primary	n.a.	82.4	40.1	50.5	17.1
Secondary	n.a.	8.4	22.4	25.5	33.3
Higher	27.8	2.6	17.8	12.6	9.4
Public recurrent expenditure per pupil in $					
Primary	n.a.	n.a.	n.a.	24	57
Secondary	n.a.	n.a.	n.a.	229	524
Higher	n.a.	n.a.	n.a.	3 058	2 745

NOTE Data refer to the mid-seventies.
n.a. = not available
SOURCE Unesco, *Statistical yearbook*, 1976, 1978–79.

spends most on the tertiary level; Tanzania and Zambia spend relatively more on the secondary and tertiary levels; the Philippines spends relatively more at the primary level. Could this be a clue towards the explanation of the higher Philippines literacy rate?

Finally, Table 2 presents a comparison of unit costs by level of education in Zambia and Tanzania. In spite of any between-countries discrepancies that might be due to differential cost accounting, one thing is certain: the cost of higher education is a multiple of the cost of primary education. In Tanzania, for example, the cost of maintaining one university place is equivalent to that of maintaining 127 primary-school places. In view of evidence of this kind, can developing countries afford the provi-

sion of university education? The Philippines, at least, can, as judged from the 20 per cent enrolment rate at the tertiary level. Yet this country has a much lower *per capita* income than Zambia, which does not have an enrolment rate at the tertiary level anywhere near as high as that of the Philippines.

The clue to this series of puzzles may lie in the *private* finance of education, a theme that will be further elaborated below.

III. The three surveys

The countries under examination have one thing in common. Three surveys were conducted within each country in the mid to late seventies, using a similar questionnaire; one survey covered the student body, another the employed graduates, and a third the country's employers. Because of the similarity of the questionnaire in each case, the generated data might have some methodological comparison. However, the sample size and coverage varies considerably from one country to the next.

Table 3 gives the exact sample sizes of each country case study. These sample sizes correspond to different coverages of the eligible population within each country. Thus the Zambian student study covered 53 per cent of the student body, whereas the corresponding percentages were 14 in Tanzania and 0.5 in Egypt. The large Philippines sample refers to those in their third and

TABLE 3. Sample size of country studies.

Country	Study of		
	Students	Graduates	Employers
Egypt	1 935	1 712	435
Philippines	9 105	4 655	777
Sudan	700	376	51
Tanzania	556	424	85
Zambia	3 399	1 371	292

SOURCE: IIEP, Egypt, Philippines, Sudan, Tanzania and Zambia studies.

fourth post-secondary year and covers 40 per cent of the eligible population. The graduates study in Zambia covered 10 per cent of the population, with post-secondary qualifications. The eligible population in the Tanzanian graduates study was those having obtained a degree since 1968 and the sample size covers 8.5 per cent of them. 95 per cent of the Philippines graduate study refers to people with collegiate degrees, although 179 non-collegiate, post-secondary schools graduates were also included in the sample. The employers surveys in all countries covered both the private and public sector.

IV. The labour-force structure

The five countries exhibit great disparities in the size and composition of their labour force. For example, in Zambia, the distribution of workers with post-secondary qualifications is as follows (out of a total labour force of 1.4 million):[1] post-secondary, 260,797; diploma, 6,461; degree, 3,649. In the Sudan, 'high-level manpower' amounts to about 11,000 individuals distributed as follows:[2] post secondary, 2,867; university, 6,904; higher education, 1,430.

In the Philippines, on the other hand, the distribution of manpower is heavier towards college graduates:[3] secondary-

TABLE 4. The proportion of university trained manpower in the labour force in manufacturing and one occupational group (percentage).

Sector group	Philippines (1961)	Zambia (1965)
Total labour force	6.2	1.3
Manufacturing sector	5.4	0.5
Professional, technical and related workers (O occupational group)	64	15

SOURCE. OECD. *Statistics of the occupational and educational structure of the labour force in fifty-three countries*. 1969.

1. IIEP Zambia study, p. 56, 59.
2. IIEP Sudan study, p. 120.
3. IIEP, Philippines study, App. C, Table 12.

school graduates, 2,846,000; college drop-outs, 764,000; college graduates, 1,266,000.

These absolute figures, however, mean little unless related to some other country indicator. Thus, Table 4 shows that the Philippines has five times the amount of university-trained labour per unit of labour force, relative to Zambia. Also, the intensity of university graduates in its manufacturing sector is twenty times as high and university graduates are represented four times as highly in the top (0 category) occupational group.

What does all this mean for educational planning? In our opinion these figures contain two 'hints' regarding attempts to plan the future development of a school system:

Hint No. 1: *The educational composition of the labour force in a given country is to a large extent supply-determined.*

What this means is that if there is plenty of coal around, people will mainly use it as a fuel. Figures such as those given above cannot tell us whether university graduates are over-utilized in Zambia and under-utilized in the Philippines, although it might appear that this is the case. Over- or under-utilization requires an efficiency test, i.e. something beyond the simple distributions of the labour force presented above.

But there is a second hint related to the previous one.

Hint No. 2: *When the educational structure of the labour force is supply-determined, forecasting future demands for high-level manpower is extremely difficult.*

Consider for example the efforts made in the countries under consideration to forecast future manpower requirements. Zambia had three 'manpower reports' since independence, two of them having 1980 as the target year and one 1976. Here are sample estimates:[1]

Required average annual output at diploma level of professional and technical people:

Estimate I	695
Estimate II	1,219
Estimate III	1,441

1. IIEP Zambia study, p. 62, 65.

Required annual degree-level output:

Estimate II	1,254
Estimate III	973

In Tanzania, the forecasts go into greater detail. For example, they indicate that there will be a need for 8,134 degree-level occupations in the 1975–80 period and these needs are split as follows:[1]

Arts-based	3,329
Science-based	4,805

In the Philippines, the Mangahas-Quizon projections[2] were based on the assumption that the state of the Phillipine economy in the year 2000 will be similar to the economies of Japan, Argentina and the Netherlands in the year 1960. They used the employment-output coefficients by educational attainment of these countries to obtain the demand for labour in the Philippines in the year 2000.

In Egypt the Ministry of Manpower and Vocational Training and USAID jointly undertook an exercise on manpower demand for the periods 1979–84 and 1979–89,[3] where projected annual demand for the first period for general-secondary graduates is estimated at less than one-fourth of the projected annual output, demand for three-year technical level is higher than the supply, that for five-year technical level is more than eight times the supply, and the demand for university and higher-education graduates is five-eighths of the supply.

Procedures and numbers in the examples listed above make one aware that manpower forecasting can at best serve to indicate the very broad directions for the development of skills in educational institutions, and the forecasts must be validated by other indicators as well.

This can also be demonstrated by means of a simple matrix from the Sudan study. Let us assume the manpower forecaster had overcome all the difficulties associated with arriving at the 'correct' number of people in each occupational category required by the target year of the plan. Then the occupation-education

1. See IIEP Tanzania study, p. 166.
2. See IIEP Philippines study, Ch. 4, p. 13–14.
3. IIEP Egypt study, Ch. 3.

translation problem would make the forecast difficult to interpret for educational policy purposes. Table 5 demonstrates the fact that whereas there is a one-to-one correspondence between a natural scientist (occupation) and a natural sciences university graduate (education), the educational vector of engineers, social scientists and teachers is too varied for such a translation to be possible.

TABLE 5. The occupation-education matrix of selected professions in the Sudan.

Field of university study	Occupation			
	Natural scientist	Engineer	Social scientist	Teacher
	%	%	%	%
Natural science	100	2	0	8
Engineering	0	94	0	4
Social sciences	0	2	78	6
Humanities	0	0	16	29
Education and teacher training	0	0	4	53
Business	0	0	1	0
Agriculture	0	2	0	0
Other	0	0	1	0
Total	100	100	100	100

SOURCE Based on IIEP Sudan study, p. 223.

V. The cost of education

One thing traditional manpower forecasts, such as those just cited, typically neglect is the cost of education. We already know that the cost of higher education in developing countries is enormous relative to the secondary and primary level. In terms of world averages the support of one higher-education student in LDCs is equivalent to the support of twelve secondary school students or eighty-eight primary-school students.[1] In the Philippines, the relative cost structure is more concentrated relative to the world average. In 1971 the social cost per student year (including earnings forgone) was as follows:[2] primary, 124 pesos; secondary, 213 pesos; college, 1,242 pesos.

All this we already knew. But some new information coming out of the IIEP country reports is the relative expensiveness of vocational-technical subjects in higher education.

Hint No. 3: *Technical and/or vocational subjects are more expensive relative to general and/or non-vocational subjects.*

As an example, consider the case of Zambia (Table 6). Technical subjects are typically more expensive than general subjects. Even if one excepts medicine, agricultural and engineering courses cost more than arts-based courses.

Although manpower planners in the past tended to ignore it, knowledge of the relative cost structure of different higher-

1. See G. Psacharopoulos, *Returns to education: an international comparison*, Elsevier, 1973, p. 127.
2. ILO Philippines Report, p. 633.

education subjects is a must in serious educational-planning work. Assuming that the policy-maker, perhaps under political pressure, would opt for the expansion of universities, the relative cost structure could dictate what faculties were to be increased in capacity.

TABLE 6. The average cost per student by field of specialization in Zambia (1974) (U.S.$).

Faculty	Average cost per student
Agriculture	4 603
Engineering	2 502
Humanities	1 125
Law	1 668
Medicine	6 366
Social sciences	1 125

SOURCE IIEP Zambia study, p. 113.
Dollar conversion based on IMF, *Financial statistics*.

VI. The salary structure

Of course, costs are only one aspect for consideration when weighing the pros and cons for the expansion of particular schools or faculties; the benefits of education must be examined as well.

Traditionally, the benefits side of education has been approximated by the salaries of employees with different qualifications. Such a method is not without problems in itself, although this is not the place for an extensive elaboration of the issue. It is sufficient to mention that this approximation procedure has not been invalidated by the empirical evidence.[1]

What we seem to know already on the relative salary structure is that more-educated persons earn more than less-educated persons world-wide, and nearly without exception. In developing countries the earnings advantage of university graduates is 2.7 times that of the secondary-school graduate and 6.4 times that of the primary-school graduate (Psacharopoulos, 1973, op.cit., p. 132). This structure is confirmed by the IIEP studies. For example, in Zambia there exists a net salary hierarchy even within the post-secondary level (see Table 7).

But the consideration of salaries by the level and kind of education received can give a series of additional messages.

1. See G. Psacharopoulos, 'Conceptions and misconceptions in human capital theory', in W. Clement (ed.), *Contributions to human capital theory*, Hamburg (forthcoming).

TABLE 7. Monthly salary by educational qualification, Zambia, 1974.

Educational qualification	Monthly salary (in kwachas)	Educational qualification	Monthly salary (in kwachas)
Diploma [1]	238	M.A., M.Sc.	343
B.A., B.Sc.	327	Ph.D.	393

1. Weighted average, one-to three-year diploma courses.
SOURCE: IIEP Zambia study.

Hint No. 4: *Even in cases of rapid university expansion, higher-education graduates maintain their earnings advantage over other kinds of graduates.*

For example, in the Philippines, the advantage of university over secondary-school graduates is 1.4 times (Psacharopoulos, 1973, op. cit., p. 132).

This can be interpreted in several ways. First, there must exist a high degree of substitution between university and other kinds of graduates for the earnings structure to remain stable while the relative skill-mix changes. Or, the demand for university graduates keeps pace with the expanding supply in such a way as to produce a 'reduced-form' solution with constant differentials.

The newly generated evidence in the countries under examination adds to the list of messages for educational planners. Thus, a distinction between graduates of different university faculties yields:

Hint No. 5: *General or non-technical graduates do as well, and sometimes better, in terms of labour-market earnings, relative to vocational- or technical-course graduates.*

This might come as a shock to those who think it is technical or vocational education that mainly commands a premium in the labour market. But whether one looks at it from the point of view of the course completed (e.g. Tables 8 and 9) or the occupation the graduate is in (Tables 10 and 11), non-technical skills are rewarded as much as vocational skills.

TABLE 8. Annual earnings [1] of university graduates by field of study, Philippines, 1970.

Field of study	Average annual earnings (in pesos)
Agriculture	3 566
Behavioural sciences	5 164
Biological sciences	4 085
Business and commerce	4 040
Engineering and technology	3 732
Fine and applied arts	4 554
Mathematics and statistics	8 998
Physical sciences	4 586

1. Earnings are six years after graduation.
SOURCE ILO Philippines Report p. 642.

TABLE 9. Annual earnings by field of study in Egypt.

Field of study	Annual earnings (in Egyptian pounds)
Agronomy	663
Arts	540
Engineering	622
Science and medicine	683
Social sciences and humanities	587
Technology	583

SOURCE IIEP Egypt study, Table 6.

TABLE 10. Monthly salary by occupation, Philippines, 1977.

Occupation	Monthly salary (in pesos)
Applied scientists	943
Medical scientists	615
Physical and natural scientists	657
Accountants	925
Judges	1 087

SOURCE IIEP Philippines study, Tables 6.41–54.

Table 9 reveals that there exist no dramatic discrepancies between the mean salaries of graduates of different higher-education fields in Egypt. Science and medicine are at the top of the earnings league and arts and technology at the bottom.

TABLE 11. Monthly salary by occupation, Zambia, 1974.

Occupation	Monthly salary (in kwachas)
Administrative	400
Agriculture	211
Clerical	201
Production and transport	215
Professional and technical	255
Sales	318
Service	156

SOURCE IIEP Zambia study, p. 352.

This hint is strengthened when one considers the differential growth of earnings by subject (Table 12). The fact that the earnings of arts and law graduates grow more relative to other subjects is indicative that employers must be deriving some benefit, after the respective employee has been under observation for some time.

TABLE 12. Mid-career to starting-salary ratios by subject, Tanzania, 1974.

Subject	Growth ratio
Agriculture	1.40
Arts	1.49
Engineering	1.36
Law	1.50
Medicine	1.29
Science	1.42

SOURCE IIEP Tanzania study, p. 264

VII. The role of the public sector

It might be said that the earnings of graduates grow because of the substantial role of the public sector in the market for them. Here are some comparative statistics on the share of graduates working in the public sector in three of the countries under consideration:[1] Zambia, 63 per cent; Sudan, 84 per cent; Philippines, 39 per cent.

The Zambian percentage could be increased to 94 per cent if one includes para-statal employment.

However, when a distinction is made between private and public employment, private-sector workers earn more than public-sector employees. For example, in Zambia the mean earnings by sector are as follows: public sector, 241 kwachas; private sector, 262 kwachas. Also, those in administrative occupations (average earnings 400 kwachas) earn more if they are in the private sector (456 kwachas) relative to the public sector (342 kwachas).[2]

This remark leads us to:

Hint No. 6: *The public sector might not be the wage leader.*

On the other hand, one cannot ignore the role of the public sector in influencing students' expectations by its starting salaries, job security and assured yearly increments on the scale of pay.

1. IIEP studies, Zambia (p. 59, 74), Sudan (p. 121) and ILO Philippines Report, p. 312.
2. IIEP Zambia study, p. 352, 353.

VIII. Salary expectations

A given salary structure, especially the first step on a public-sector salary scale, acts as a signal to which social demand responds. A high starting salary for engineers relative to agriculture graduates will inevitably generate a heavier demand for engineering places. Consider as an example the civil-service starting salaries in the Sudan and Tanzania (Tables 13 and 14). These are neatly stratified in terms of ascending educational level to the fine tuning of specific years of post-secondary school completion.

This salary hierarchy inevitably fosters students' expectations. Nearly four out of every five students aspire to employment in their country's public sector (Table 15).

TABLE 13. Starting civil-service annual salaries in the Sudan by duration of post-secondary course.

	Duration or duration and kind of course					
				5 years		6 years
	2 years	3 years	4 years	Arts or science	Engineering	Medicine
Annual salary (in pounds)	300	340	400	425	530	560

SOURCE: IIEP Sudan study, p. 91.

TABLE 14. Starting civil-service monthly salaries in Tanzania.

Course	Monthly salary (in shillings)	Course	Monthly salary (in shillings)
Primary school	350	University degree	1 420
Form IV	440	Teacher (arts)	1 475
Form VI	650	Sciences	1 530
		Economics	1 530
		Agriculture	1 595
		Engineer	1 865
		Doctor of medicine	2 110

SOURCE IIEP Tanzania study, p. 74.

TABLE 15. Expected sector of employment, Sudan and Zambia (percentage).

Country	Sector		
	Government	Private	Other
Sudan	78	17	5
Zambia	81	16	3

SOURCE IIEP Sudan study, p. 207. IIEP Zambia study, p. 313.

The distribution of the expected sector of employment in Egypt confirms that the majority of students are more likely to work in the public sector (IIEP, Egypt study, Table 29):

TABLE 16. Egypt: expected sectors of employment.

	Expected sector of employment			
	Government and public	Private	Self-employed	Total
Percentage distribution	56	25	19	100

The difference in *expected* salary between those who have just secondary qualifications and post-secondary ones is enormous in Tanzania (IIEP Tanzania study, p. 227): *salary expected by those with secondary qualifications,* 625 shillings per month; *salary expected by those with post-secondary qualifications,* 1,600 shillings per month.

Higher-education students expect different salaries according to their field of study (Table 17), and the desirability ranking of different faculties matches the pecking order of expected earnings Table 18).

TABLE 17. Expected monthly starting salaries by faculty, Zambia, 1974.

Faculty	Expected starting salary (in kwachas)
Law	346
Business	253
Social sciences, humanities	252
Agriculture	221
Engineering, technology	210
Natural sciences	231
Medicine	206

SOURCE IIEP Zambia study, p. 325.

TABLE 18. Expected salary and desirability of selected professions in Tanzania

Profession	Expected monthly salary (in shillings)	Desirability rank
Engineer	1 602	1
Social scientist	1 369	2
Lawyer	1 458	3
Businessman	1 447	4
Agriculturist	1 384	5
Natural scientist	1 301	6

SOURCE IIEP Tanzania study, p. 212.

With these indications in mind, the following becomes clear:

Hint No. 7: *Public-sector pay scales strongly influence student expectations and hence the social demand for higher education.*

The importance of this hint becomes clearer when one attempts to influence the social demand for education in a given direction.

IX. The returns to education

That education is privately and socially profitable at all levels in LDCs is something we already know. The test case is the Philippines, where, in view of the tremendous expansion of higher education, the returns to this level of education might have fallen. In this respect it is very difficult to establish comparable time series of the returns of education in the Philippines. However, Table 19 indicates that the returns to higher education in this country are above the returns to secondary education and comparable to the yield of alternative investments.

TABLE 19. Rates of return to education in the Philippines, 1971 (percentage)

Educational level	Social	Private
High school: 4 years (over 5–6 primary)	6.5	6.5
College: 1–3 years (over 4 high school)	5.0	6.0
College: 4 years (over 4 high school)	8.5	9.5
College: 5 or more years (over 4 high school)	8.0	8.5

SOURCE ILO Philippines Report, p. 635.

What is more interesting, however, is the comparison of the returns to higher education across fields of specialization (Table 20).

TABLE 20. Rates of return in the Philippines by subject, 1969 (percentage)

Subject	Rate of return	
	Private	Social
Business and commerce	14.0	10.5
Civil engineering	15.0	8.0
Chemical engineering	17.0	10.0
Mechanical engineering	18.0	13.0
Liberal arts	11.0	n.a.
Agriculture	5.0	<5.0
Law	18.0	15.0
Physical science	8.5	n.a.

1. Rates refer to the University of the Philippines and are unadjusted for ability.
SOURCE: ILO Philippines Report, p. 643, Table 162.

What we learn from this table is:

Hint No. 8: *The economic returns to non-vocational subjects are often greater than the returns to technical subjects.*

This result is the outcome of the contribution of high costs of the technical subjects and high benefits of the general subjects.

X. Unemployment

The cost-benefit or efficiency conclusion of section IX might be undermined by the popular belief that there exists widespread unemployment among university graduates, especially among those who followed humanities, social sciences or law courses. Rates of return estimates typically abstain from an unemployment correction. But at least in one case where such correction was performed, the returns to education were not substantially affected.[1] This finding helped explain the puzzle of the coexistence of high unemployment rates among university graduates in India and a high social demand for higher education.

The material collected in the countries under examination allows us to make an important distinction between two different aspects of unemployment: *incidence* and *duration*. Unemployment incidence is the probability or percentage of unemployed from a given population group. It is the usual 'unemployment rate'. Unemployment duration, on the other hand, has a calendar time attached to it. It usually takes the form of 'absorption rates X years after graduation', or, simply, mean years or months unemployed by educational level or since graduation.

A. Unemployment incidence

What we seem to already know is that the relationship between unemployment and education is of the inverted U-shape. That is,

1. M. Blaug et al., *The causes of graduate unemployment in India*, Allen Lane, 1969.

it is the graduates of the middle levels of education that are especially hit by unemployment.[1] (See figure 1.)

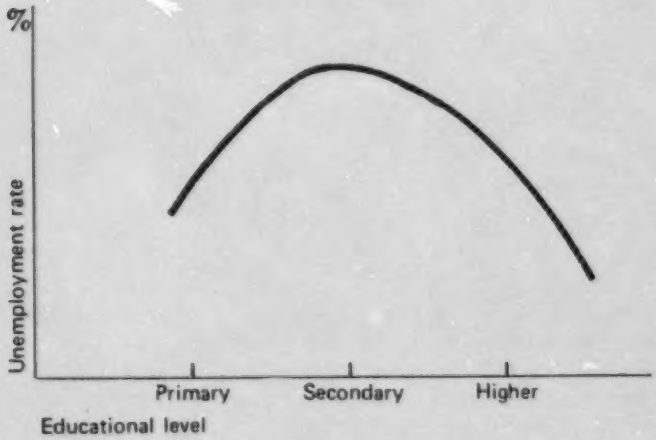

FIGURE 1. *The relationship between education and unemployment incidence.*

TABLE 21. Unemployment rates by educational level, Philippines, 1961 and 1966 (per cent).

Educational level	Unemployment rate	
	1961	1968
No education	4.0	4.4
Grades I-IV	5.6	4.5
Grades V-VI	9.4	6.8
High school, 1–3 years	12.6	13.7
High school graduate	18.1	15.3
College, 1–3	18.7	17.4
College 4 plus years	7.9	7.2
Overall	8.5	7.8

SOURCE: ILO Philippines Report, p. 309.

1. See G. Psacharopoulos, *Earnings and education in OECD countries*, OECD, 1975, Table 6.22.

TABLE 22. The distribution of those unemployed over one year by educational level, Sudan, 1974.

Educational level	Percentage
Less than primary	30
Primary completed but less than secondary	53
Secondary completed and above	18

SOURCE: ILO, *Growth, employment and equity: comprehensive strategy for the Sudan*, 1976, p. 412.

Tables 21 and 22 present evidence of this nature from the Philippines and the Sudan. Unemployment clearly peaks at the secondary or college drop-out level. It is also interesting to note that the unemployment rate among Philippine graduates has more or less remained the same between 1961 and 1968 in spite of the tremendous higher-education expansion that took place during this period. Therefore:

Hint No. 9: *The incidence of unemployment among university graduates might be lower than that of other levels of education.*

TABLE 23. Unemployment rates by occupation in the Philippines

Occupation	Unemployment rate (percentage)
Professional and technical workers	1.3
Administrative, executive and managerial	1.0
Clerical	5.1
Sales	2.5
Farmers	1.8
Miners	3.2
Transport and communication	2.9
Craftsmen and production	4.2
Manual	9.7
Service	2.8
Occupation not reported	15.4
Overall	2.6

SOURCE: IIEP Philippines study, Appendix C, Table 2.

This is confirmed by evidence on the occupational structure of unemployment incidence (see Table 23). Unemployment is at its highest among those in non-university-graduate occupations, such as clerical workers, craftsmen and manual workers.

The material collected in different countries allows us to draw the following conclusion:

Hint No. 10: *The incidence of unemployment is not particularly pronounced among general-course graduates.*

Table 24 shows that in the Philippines 100 per cent of law graduates are absorbed five years after graduation and the corresponding percentage for liberal arts is 95 per cent. Agriculture graduates, on the other hand, exhibit the lowest absorption rate (64 per cent). The own-field/all-fields distinction in Table 24 is useful in assessing the flexibility of different kinds of graduates to enter jobs for which they have not been specifically trained. Thus business-administration graduates are easily absorbed in 'other jobs', whereas civil-engineering graduates do not seem to have the same flexibility. The Sudan case (Table 25) presents a rather different picture, i.e. agriculture graduates exhibit a lower unemployment rate relative to law graduates. However, one cannot generalize from this case because of the small number of observations.

TABLE 24. Absorption rates of the University of Philippines graduates, five years after graduation.[1]

Field of specialization	Absorption rate	
	All fields	Own field
Agriculture	.64	.85
Business administration	.90	.60
Chemical engineering	.72	.48
Civil engineering	.75	.75
Liberal arts	.95	.81
Mechanical engineering	.79	.67
Physical science	1.00	.91

1. Data refer to 1969.
SOURCE: ILO Philippines Report, p. 638–9.

TABLE 25. Number of unemployed graduates as percentage of total number of graduates, Sudan, 1973

	Faculty				
	Agriculture	Arts	Economics	Law	Sciences
Percentage unemployed	7.9	32.7	39.5	54.8	30.9

SOURCE IIEP Sudan study, p. 45.

B. Unemployment duration

What we seem to know on the duration-of-unemployment front is that unemployment is a sharply declining function of age. Namely, the unemployment problem is essentially a youth problem, nearly everyone finding a job after some time. The material collected in the IIEP project corroborates this.

Hint No. 11: *Unemployment concentrates in the first months of entry into the labour force.*

Figure 2 gives an illustration in this respect from the Zambian case.

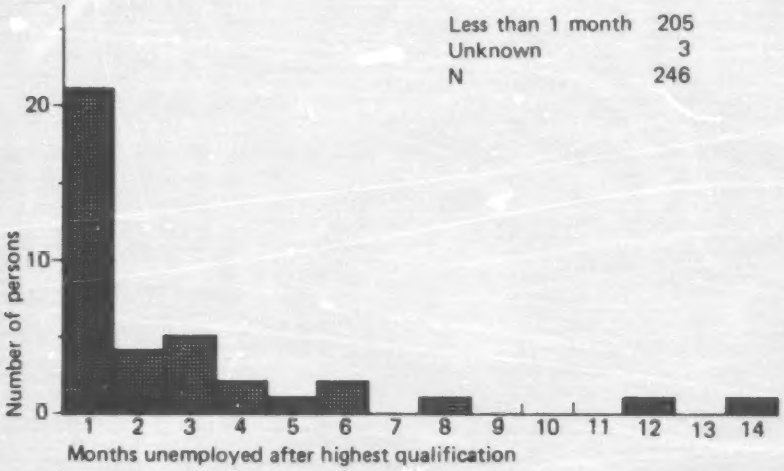

FIGURE 2. *Number of months unemployed after graduation*

SOURCE IIEP Zambia study, p. 211

Table 26 shows that in the Philippines the majority of graduates waits less than six months. The more recently collected data indicate a mean waiting period of 3.2 months (Table 27).

TABLE 26. Distribution of university graduates by employment status, Philippines (percentage).

Length of time to first job after graduation	Distribution of 1964 graduates	Distribution of 1968 graduates
Did not wait	11.8	23.2
Less than six months	39.6	31.6

SOURCE ILO Philippines Report, p. 645.

TABLE 27. The distribution of employed graduates by the number of months unemployed after actively seeking for a job, Philippines.

Months waiting	Percentage of graduates	Months waiting	Percentage of graduates
0–2	55	13–24	7
3–6	22	25 plus	4
7–12	12		

SOURCE IIEP Philippines study, Table 6.23.

On the basis of this we may derive:

Hint No. 12: *The duration of job search among university graduates is 'short' in the sense of not substantially affecting a lifetime efficiency measure.*

This relatively short waiting period might be better labelled 'search activity' rather than 'unemployment'. The reason becomes clear when one considers the source of delay for getting a job in the Philippines (Table 28).

Clearly, 66 per cent of the delay reasons are of a voluntary character, i.e. low salary or unsatisfactory job conditions. Only one-third of the sample explicitly stated they had no job offer. Of course, those who waited for a different reason had a differential

TABLE 28. Distribution of the reasons for the delay in getting a job, Philippines.

Reason	Percentage
Low salary offer	23
Not satisfactory job conditions	43
No job opportunity	33
Other	24

SOURCE IIEP Philippines study, Table 6.26.

mean waiting period: low salary offer, 5.5 months; no job opportunity, 10.2 months. Similarly, 62.4 per cent of the Egyptian higher-education students expect to find a job within a year after graduation. The mean expected time of search in the sample is 1.1 years (Table 29).[1]

TABLE 29. Expected delay in finding permanent employment, Egypt.

Time	Percentage	
Less than one year	62.4	
Less than two years	23.2	Mean time: 1.1 years
Less than three years	9.3	
More than three years	5.0	

NOTES 1. Owing to rounding, figures do not sum to exactly 100 per cent.
2. Mean calculated using code 'Less than one year' = 0.5, 'Less than two years' = 1.5, 'Less than three years' = 2.5, 'More than three years' = 4.

On the basis of this evidence, we may put forward:

Hint No. 13: *What appears to be an 'unemployment problem' among university graduates is to a large extent a 'job-searching process'.*

The material collected in this project permits a distinction to be made between differential waiting periods and field of specialization (Tables 30 and 31). However, the evidence is too mixed for a general conclusion to emerge.

1. IIEP Egypt study, Table 30.

TABLE 30. Waiting period between graduation and first job, the Sudan, 1974

Waiting period	Engineer	Social scientist	Lawyer
	(%)	(%)	(%)
Less than 6 months	96	77	10
6 months to 12 months	4	14	60
1 year or over	0	9	30

SOURCE IIEP Sudan study, p. 219.

TABLE 31. Waiting period between graduation and first job by profession, employment sector and degree level, Sudan

Characteristic	Waiting period		
	Under 6 months	6–12 months	Over 12 months
	(%)	(%)	(%)
Agriculturist	100	0	0
Business manager	80	18	2
Engineer	96	4	0
Lawyer	10	60	30
Liberal professions	52	34	14
Natural scientist	93	7	0
Social scientist	77	14	9
Teacher	86	12	2
Administration	62	27	11
Agriculture	97	2	2
Education	73	20	7
Industry	85	13	2
B.A., B.Sc.	72	24	4
M.A., M.Sc., Ph.D.	73	27	0
Overall	79	16	5

SOURCE IIEP Sudan study, p. 219 ff.

XI. The role of credentials

The IIEP project surveyed directly a set of employers regarding the factors they consider important in hiring employees. In Tanzania, the main employer complaint in recruiting was the low relationship between academic performance and job performance (see Table 32).

TABLE 32. The distribution of problems encountered by employers in recruiting graduates, Tanzania.

Problems	Percentage
No relation between academic performance and job performance	47
No correspondence between training and job requirements	23
No correspondence between educational programmes and needs of the job	19
Job too complex for precise specification of educational qualifications	10
Other	1
Total	100

SOURCE: IIEP Tanzania study, p. 296.

In the Philippines there exists an interesting stratification of the factors deciding the employee's starting position within the firm. The numbers refer to the average rank on a 1 to 12 scale.[1] In the

1. IIEP Philippines study, p. A.7.9. See also p. A.7.5, A.7.7.

descending order of importance the ranks of the stratification are (rank 1 for highest emphasis, rank 12 for lowest emphasis):

1. Work experience	2.3
2. Specialization	2.6
3. Academic record	3.7
4. Previous position	4.3
. . . . .	
11. Civil status	11
12. Sex	12

Work experience, specialization and academic record come out top. It is interesting to note that employers put more emphasis on work experience and the type of training than on academic record. The government employers put more emphasis on academic records and specialization and less emphasis on work experience than private employers.

	Work experience	*Specialization*	*Academic record*
Private	2.25	2.7	3.8
Government	2.35	2.3	2.9

It is the government sector which gives more importance to credentials. These remarks lead us to:

Hint No. 14: *It is difficult to justify the view that employers use education as a screening device, as there might exist a productivity counterpart.*

XII. The social demand for higher education

The material collected in the IIEP research permits the study of the reasons for continuing to higher education. One conclusion that emerges from the cross-country comparison is:

Hint No. 15: *The social demand for higher education is mainly for professional career reasons.*

Consider, for example, the following percentages of the student group that reported professional reasons for continuing to higher education:[1] Philippines, 81 per cent; Sudan, 64 per cent; Tanzania, 95 per cent; Zambia, 85 per cent. In Egypt, similarly, on a 3-point scale of degree of importance, 'professional qualifications' receive the highest average score (2.4) as the reason for the pursuit of higher education.[2]

Sometimes it is alleged that it is lack of employment opportunities among secondary-school graduates that pushes people into higher education. In the Sudan, however, only 6 per cent of the sample stated this to be the case. None the less, there exists an interesting disaggregation of the reasons for continuing to higher education by socio-economic background (see Table 33). It is the sons of the unskilled workers who wish to enter higher education, for unemployment reasons. And it is the offspring of the top-income fathers who wish the least to study for career reasons.

1. IIEP studies, Philippines (p. 5.B.26), Sudan (p. 184), Tanzania (p. 340) and Zambia (p. 263).
2. IIEP Egypt study, Ch. 6.

TABLE 33. Disaggregation of the reason for continuing to higher education, Sudan (percentage).

Father's occupation or income	Need for career qualification	Lack of employment opportunity
Occupation		
Farmer	67	5
Merchant	55	7
Government employee	70	3
Skilled worker	60	0
Unskilled worker	54	16
Income		
Under 250 pounds	65	6
250–500	64	5
500–1 000	70	5
Over 1 000	47	3

SOURCE IIEP Sudan study, p. 184.5

The foregoing remarks lead to:

Hint No. 16: *A discriminatory fee-paying system in higher education might redress finance inequity in developing countries.*

The importance of career reasons in continuing to higher education has repercussions for shaping the social demand for education. For example, a combination of selective fees and appropriate civil-service starting salaries could be an effective instrument in shaping the social demand for higher education.

XIII. Student advice in selecting a career

The percentage of those who did not receive advice or received unsatisfactory advice in four of the countries studied is as follows:[1] Philippines, 60 per cent; Sudan, 71 per cent; Tanzania, 78 per cent; Zambia, 41 per cent. Similarly, more than one-third of the students in Egypt indicated that they would have chosen a different field of study had they received better career information—an indication of the inadequacy of the career guidance system in that country.

This is in direct contrast with the importance given by the students to a professional career as a reason for continuing to higher education. This fact points towards the importance of instituting a more effective career-guidance system in developing countries.

The statistical material collected in this project permits an elaboration of the reasons for the low use and differential effectiveness of career guidance in LDC's. Tables 34 and 35 show two contrasting cases in terms of differential use of sources of guidance. In the Sudan, it is mainly family and friends, whereas in Zambia it is career masters.

One would expect that professional career counsellors would provide the most effective guidance. Yet, if we judge the effectiveness of a given source of advice by the student's satisfaction, it is *not* the career masters who come on top of the list. In Zambia, it is parents and relatives that provide the most satisfactory gui-

1. IIEP Studies, Philippines (p. 5.B.116), Sudan (p. 187), Tanzania (p. 345), and Zambia (p. 272).

TABLE 34. Sources of career information in the Sudan.

Source	Percentage distribution
Friends and relatives	23
Newspaper and general	21
Employment in the field	20
University staff	14
University employment office	12
Fellow students	6
Guidance counsellors	4

SOURCE: IIEP Sudan study, p. 190.

TABLE 35. Satisfaction from career guidance by source of guidance, Zambia.

Source of guidance	Student number using source	Very satisfactory	Not satisfactory
		(%)	(%)
School staff	433	65	21
Parents and friends	474	69	19
Career masters	1 764	64	24
Previous employment	204	62	19
Fellow students	168	60	20
Newspapers	811	50	22

SOURCE: IIEP Zambia study, p. 164, 269–72.

TABLE 36. The degree of career guidance satisfaction by source of guidance: Philippines and Tanzania (percentage of those who received very satisfactory advice).

Source of guidance	Philippines	Tanzania
School staff	16	22
Friends and relatives	44	29
Career counsellors	16	22
Fellow students	10	12
Previous employment	9	50
Newspaper	37	22

SOURCE: IIEP studies, Philippines, Tables 5B.97–103, and Tanzania, p. 202.

dance. Actually, career masters have the most dissatisfied customers (Table 35). The low effectiveness of professional advisers is also observed in the Philippines and in Tanzania (as shown in Table 36).

From these indications we derive:

Hint No. 17: *The state of professional career advice in LDCs leaves much to be desired.*

XIV. The admission into higher education

Admission to higher education does not always follow the wishes of the students. In Zambia, for example, there exist strict admission quotas, as shown in Table 37.

TABLE 37. Admission quotas to higher education by subject, Zambia.

Subject	Percentage	Subject	Percentage
Science-based		*Arts-based*	
Agriculture	9	Education	51
Science education	36	Library studies	2
Engineering	17	Law	11
Medicine	13	Humanities	36
Mining	15		
Natural sciences	10		

SOURCE: IIEP Zambia study, p. 106.

These quotas necessarily produce a conflict between what the students wish to study and what the policy-maker offers them.

The top three most desired professions at the end of secondary schooling in the Sudan and Tanzania are as shown in Table 38.[1]

The mismatch between the desired and actual subject choice is most explicit in the following case from Tanzania. Out of those who study engineering, 89 per cent have listed engineering as their

1. IIEP studies, Sudan (p. 193) and Tanzania (p. 350).

TABLE 38. Most desired professions at end of secondary education

	Percentage of the student body who wish to become		
	Engineer	Social scientist	Lawyer
Sudan	22	9	6
Tanzania	24	18	14

desired field. However, the percentage is only 46 among those studying social sciences and the humanities.[1] But the situation is very different in the Philippines where, on the average, 82 per cent of the student body study what they wish to study (see Table 39).

TABLE 39. Percentage taking the course wanted, Philippines.

Course	Degree of wish-study correspondence	Course	Degree of wish-study correspondence
Agriculture	87	Liberal arts	78
Business	78	Medical sciences	84
Engineering	89	Physical science	83
Fine arts	95	Social sciences	82
Food nutrition	83	Teacher training	74
Humanities	77		
Law	91	Overall	82

SOURCE: IIEP Philippines study, p. 5.B.139.

The implication of this is:

Hint No. 18: *The degree of social demand satisfaction is higher in countries with a private educational finance system.*

To this one should add the general trend in some of the countries under examination for the promotion of science at the expense of arts subjects. For example, the proportion of arts (versus science) university enrolments in the Sudan has dropped from 66 per cent

1. IIEP Tanzania study, p. 211.

in 1969 to 53 per cent in 1973.[1] Also, the proportion of arts in Tanzania's sixth form has dropped from 47 per cent in 1961 to 26 per cent in 1975.[2] These trends might have been against social demand. However, the degree to which this swing serves a particular country's development prospects could be a subject of debate.[3]

Furthermore, the non-satisfaction of social demand for popular non-vocational subjects could find an outlet abroad at a considerable social cost (see Table 40).

TABLE 40. The number of students studying abroad as a percentage of home students, by subject, Sudan, 1974

	Agriculture	Economics, law, arts	Engineering	Science
Students enrolled abroad (%)	86	63	76	14

SOURCE: Based on IIEP Sudan study, p. 72, 84.

TABLE 41. The discrepancy between the desired and actual field of study in Egypt (percentage).

Field of study	Desired	Actual
Social sciences and humanities	39.8	41.4
Science and medicine	26.9	21.5
Engineering	13.3	8.6
Agriculture	11.8	14.3
Technology	3.3	8.8
Arts	1.0	0.2

SOURCE: IIEP Egypt study, Table 11.

1. IIEP Sudan study, p. 78.
2. IIEP Tanzania study, p. 98.
3. See H. K. Lee and G. Psacharopoulos, 'Educational and economic indicators, revisited', *World development*, Autumn 1979.

Table 41 shows that the most popular fields of study in Egypt are social sciences, humanities, science and medicine. Yet, there exists a contrast between the desired and actual fields studied. The greatest discrepancies refer to engineering and technology. There are far more students wishing to study engineering (13.3 per cent) than technology (3.3 per cent), although the actual distribution reveals that the two fields have a more or less equal share in enrolments (nearly 9 per cent).

XV. Admission tests

When a *numerus clausus* exists, it is also natural that some means of selection exists. In the Philippines there exists a National College Entrance Examination for the purpose of selecting good-quality students. The material collected in the IIEP programme enables us to draw a further conclusion:

Hint No. 19: *Selection procedures are often in favour of the upper socio-economic groups.*

Consider, for example, the performance of candidates at the above examination, as measured by the General Scholastic Aptitude (GSA) score in Table 42. The top grades correspond to the higher socio-economic background students, whether the latter is measured in terms of family income or the level of education of the father.

TABLE 42. GSA score by selected student characteristics, Philippines.

Student characteristic	GSA score percentile	Student characteristic	GSA score percentile
Family income (pesos)		*Father's education*	
Under 250	40	No schooling	40
250–499	40	Elementary	41
500–749	51	High school	41
750–999	49	College	62
1 000–1 249	57	Master/doctorate	66
1 250 plus	68		

SOURCE: IIEP Philippines study, Tables 5.2.10, 5.2.11.

XVI. Private finance and the élite

As shown in Table 43, over 90 per cent of the cost of higher-education study in Egypt is born by the student or his family. This is the rule of thumb in most countries, the Philippines being the notable exception.

TABLE 43. The sources of student finance in Egypt.

	Private	Schlarship	Loan	Other
Percentage	93.9	4.1	0.7	1.3

SOURCE: IIEP Egypt study, chapter 6, Table 23.

TABLE 44. The distribution of students by source of finance (percentage)

Source of funds	Philippines	Sudan	Zambia
Student works	8	13	8
Family	83	35	6
Other private	2	2	26
Government	3	20	55
Other	4	30	5
Total	100	100	100

SOURCE: IIEP studies, Philippines (p. 5.B.10), Sudan (p. 202) and Zambia (p. 297).

Are privately financed educational systems necessarily élitist? Table 44 shows some dramatic differences between some of the countries under comparison in the degree of student finance from different sources. Whereas in the Philippines the family accounts for 83 per cent of student finance, the corresponding percentage in Zambia is only 6. And there exist interesting family versus self-finance differences by father's income in Zambia (see Table 45).

TABLE 45. Source of student finance by father's income, Zambia (percentage).

Father's income	Family source	Own employment source
Under 50 kwachas	2	7
50–100	2	9
100–150	3	9
150–200	7	7
Over 200	18	7
Overall	6	8

SOURCE: IIEP Zambia study, p. 299.

However, when one looks at the representation of farm-father students in the Sudan and the Philippines, there exist striking similarities:[1] 20 per cent of students in the Philippines and 23 per cent of students in the Sudan have fathers who are farmers. Given the fact that the farm-origin student representation is an index *par excellence* for the openness of an educational system, we may derive the following:

Hint No. 20: *Privately financed educational systems are not necessarily more élitist.*

After all, there seem not to exist sharp differences between the distributions of students by family income attending public or private institutions in the Philippines (see Table 46).

1. IIEP studies, Philippines (Table 5.B.5), and Sudan (p. 156).

TABLE 46. The distribution of students in public and private institutions by parent's income, Philippines, 1971 (percentage).

Parents' income (in pesos)	Public	Private
0–2 879	31.1	21.5
2 880–4 379	18.9	17.2
4 380–5 399	11.0	10.1
5 400–7 199	10.0	10.9
7 200–8 639	5.1	6.9
8 640–10 079	2.8	4.1
10 080–11 039	2.5	3.4
11 040–11 999	3.5	5.6
12 000–23 999	8.0	10.6
24 000 and above	5.4	8.0
No response	1.7	1.7
Total	100.0	100.0

SOURCE ILO Philippines Report, p. 328

XVII. The reasons for undertaking higher education

The collection of data on students' opinions about the reasons for undertaking post-secondary education permits a disaggregation by sex, region and father's income. As stated in Hint No. 15 above, the vast majority of students wish to study for professional reasons. Surprisingly, however, it is females that reported a greater wish for professional studies relative to males (Tables 47 and 48). The explanation may be that females view higher education as an antidote for sex discrimination; but this explanation is not valid for the Sudan, where a higher proportion of women undertake study for its own sake.

One of the lowest reported reasons for continuing to higher education is the bursary incentive. Yet not much difference exists in this source of social demand for university education between high- and low-income groups in Zambia (Table 49), although there is such a difference between urban and rural areas in the

TABLE 47. The reasons for undertaking post-secondary studies, Zambia (percentage)

Reason	Males	Females
Professional qualification	70	77
Better employment opportunities	24	17
Study for its own sake	5	4
Bursary incentive	1	2

SOURCE IIEP Zambia study, p. 332.

TABLE 48. The reasons for continuing to higher education, by sex and father's income, Sudan (percentage).

Reason	Sex		Father's income	
	Male	Female	Low (<250)	High (>1 000)
Career reasons	33	15	32	24
Professional qualification	32	39	34	24
Study for its own sake	21	43	22	38
Lack of employment opportunities	6	2	6	3
Preference for town life	4	2	2	6
Others/no response	4	–	4	5

NOTE Percentage may not add up to 100, owing to rounding.
SOURCE IIEP Sudan study, p. 185.

TABLE 49. The reasons for undertaking post-secondary education, by father's income, Zambia (percentage).

Reason	Fathers' income (in kwachas)	
	Low (<50)	High (>200)
Professional qualification	75	72
Better employment opportunities	14	14
Study for its own sake	6	10
Bursary incentive	1	1

NOTE Percentages do not add up vertically to 100 because of the omitted 'unknown' category.
SOURCE IIEP Zambia study, p. 265.

TABLE 50. The reasons for undertaking post-secondary training, Zambia (percentage).

Reason	Urban centre	Rural area
Professional qualification	70	73
Better employment opportunities	14	14
Study for its own sake	10	8
Bursary incentive	3	1

NOTE Percentages do not add up vertically to 100 because of the omitted 'unknown' category.
SOURCE IIEP Zambia study, p. 262.

TABLE 51. The distribution of those who would like to continue on to college mainly for professional reasons, by family income, Philippines.

Family income group (pesos)	Percentage	Family income group (pesos)	Percentage
< 500	17	2 000–2 999	10
500–999	31	3 000–4 999	7
1 000–1 499	19	> 5 000	8
1 500–1 999	8		

NOTE Figures refer to the 'most important' reason.
SOURCE Philippines study, Table 5B.26.

same country (Table 50). In the Philippines, it is mainly those in the lower family-income group who wish to continue to higher education for professional reasons (Table 51). However, given the low overall percentage of those who reported the bursary reason as being important for the continuation of their studies, we may derive the following hint:

Hint No. 21: *Financial incentives (such as government fellowships) might be of limited effectiveness in influencing the social demand for post-secondary education.*

XVIII. The perception of job characteristics

Table 52 contains rank orderings of eight job characteristics as perceived by students in four countries. There exists a striking similarity in the ordering among the countries: 'Interesting work', 'Further studies' and 'Secure future' are at the top of the list, whereas travel possibilities and supervision come at the bottom. What is important for educational planning is that 'Good income' comes somewhere in the middle.

TABLE 52. The relative importance of selected job characteristics as perceived by the students.

Job characteristic	Egypt [1]	Sudan [2]	Tanzania [2]	Zambia [1]
Interesting work	–	65	76	1.72
Further studies	1.2	53	60	1.51
Secure future	1.2	53	55	1.50
Work with other people	–	50	67	1.25
Good income	1.1	50	36	1.15
Creative work	1.0	43	46	1.14
Travel	0.8	22	20	0.62
Supervise others	–	20	7	0.54

NOTES 1. Mean of rank ordering: 2 = very important; 1 = important; 0 = not important.
2. Percentage stated characteristic was 'very important'.
SOURCE IIEP studies. Egypt (Chapter 8), Sudan (p. 209), Tanzania (p. 226) and Zambia (p. 179).

These considerations might suggest the following:

Hint No. 22: *Income incentives (such as civil-service salary scales) might be of limited importance as a policy instrument in educational planning.*

However, the qualification must be made that this hint might be erroneous, in the sense that the student might have tacitly included 'income' in his (or her) definition of 'interesting work'.

XIX. The willingness to work in rural areas

It is a common complaint in educational planning that, though badly needed in rural areas, the output of the system finds its way to the cities and remains unemployed for a period of time. The IIEP project on education and employment has generated direct information on what the students themselves feel about this issue. Table 53 presents a relative incentives/disincentives ordering associated with working in rural areas in three countries. With one exception, incentive number one is financial, and disincentive number one is the lack of amenities such as water and electricity.

TABLE 53. Incentives and disincentives for working in rural areas (percentage).[1]

	Sudan	Tanzania	Zambia
Incentive			
Financial	15	28	23
Promotion prospects	19	13	20
Freer life	12	24	26
Family reasons	11	n.a.	n.a.
Disincentive			
Lack of water, electricity	5	19	40
No relatives and friends	15	5	8
Dull rural life	15	2	6
Promotion delay	12	17	15

NOTE 1. Percentage refers to those who stated incentive/disincentive 'very important'.
SOURCE IIEP studies, Sudan (p. 208), Tanzania (p. 221, 223), and Zambia (p. 176).

These indications lead us to the following idea:

Hint No. 23: *An increased rural-urban salary differential might increase the willingness of graduates to work in rural areas.*

However, nothing can be said on the absolute size of this differential necessary to counterbalance the strong feeling against the lack of amenities.

T. W. Schultz, in his December 1979 Nobel lecture,[1] put great emphasis on the possibility of poverty reduction in LDCs via improvements in population quality. Although education is but one factor contributing to such improvements, its operation is slow. The data from our research support the additional hint:

Hint No. 24: *Population quality improvements via education, although positive, are likely to be slow-acting.*

Consider, for example, the pace of population growth in Egypt,[2] from 29,389,000 in 1965 to 38,741,000 in 1977. As a result, higher-education enrolments in this country grew by a phenomenal amount in roughly the same period *(Unesco statistical yearbook, 1978–79)*, from 174,518 in 1965 to 493,328 in 1976.

Yet, Table 54 shows that it is very difficult for education to win the population race. Improvements in the distribution of the population by degree have been extremely modest.

TABLE 54. The changing educational composition of the Egyptian labour force, 1968 and 1977 (percentage).

Educational level	1968	1977
Illiterates	60.8	52.5
Reads and writes	27.8	26.3
Below secondary general	3.0	4.4
Secondary general	5.0	9.2
Above secondary general, but below university degree	0.5	2.3
University degree plus	2.8	5.2

SOURCE: IIEP Egypt study, Table 3.

1. T. W. Schultz, *The economics of being poor*, Nobel Lecture, 10 December 1979.
2. IIEP Egypt study.

Concluding remarks

The set of 'Hints' derived above is of course indicative, in the sense that the empirical base comes from only five countries and the underlying surveys might suffer from sampling and other problems. However, one cannot dismiss the fact that in the countries surveyed some commonalities and divergences were found. When these 'signals' are put together, the set of hints might be interpreted as 'messages' to the educational planner.

Nobody has ever designed a research programme which, when conducted, will answer all educational planning problems. Since this is unlikely to happen in the near future, we shall have to content ourselves with partial hints or messages coming from studies such as those surveyed in this booklet.

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The book

Some of the issues that this booklet deals with are: How does wage structure vary between sectors of employment and between specializations? What is the degree of mismatch between expectations and realities in respect of the reward system of the labour market? How does the phenomenon of unemployment vary from course to course and from level to level? What rôle do credentials play in finding a job? To what extent do the institutions of education help the students in the process of transition from school to work? What factors control the demand for higher education? What is the rôle of education in improving the quality of the labour force?

These are some of the questions that the authors have attempted to answer, on the basis of empirical evidence derived from the IIEP research project on higher education and employment.

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